



IP SOIL II

Taking account of the floods risk

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In the Spatial planning

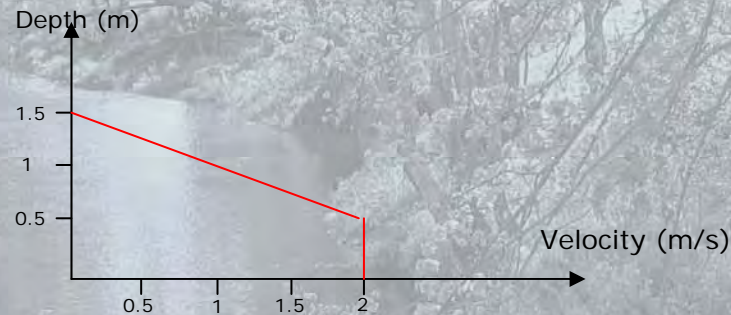
- To manage the space around a river
- To avoid damages against floods
 - Prevention Part
- Hazard Zone Mapping



Hazard Zone Mapping (HZM)

- Hydraulic study of the river
 - Lot of parameters
 - About the river : cross section, discharge...
 - About the bassin : properties of the soil, the soil cover, the actual land use
- Flood area
- Main criteria
 - Velocity
 - Depth

Definition of the zone risk

- Coupling of the 2 main criteria and with the fonctionement of the river



- Very dangerous  **Red zone**
- Dangerous  **Yellow zone**
- Flood protection  **Rest Risk**
- Floods essential area  **Blue zone**

HZM and Spatial planning

- To reduce the danger
- To reduce the damages
 - Red 📍 Prohibition of buildings
 - Yellow 📍 Requirement and precaution zone
 - Blue 📍 water management demand zone
 - Rest zone 📍 advice areas
- Analyse of need + analyse of the implementation of HZM => Spatial planning

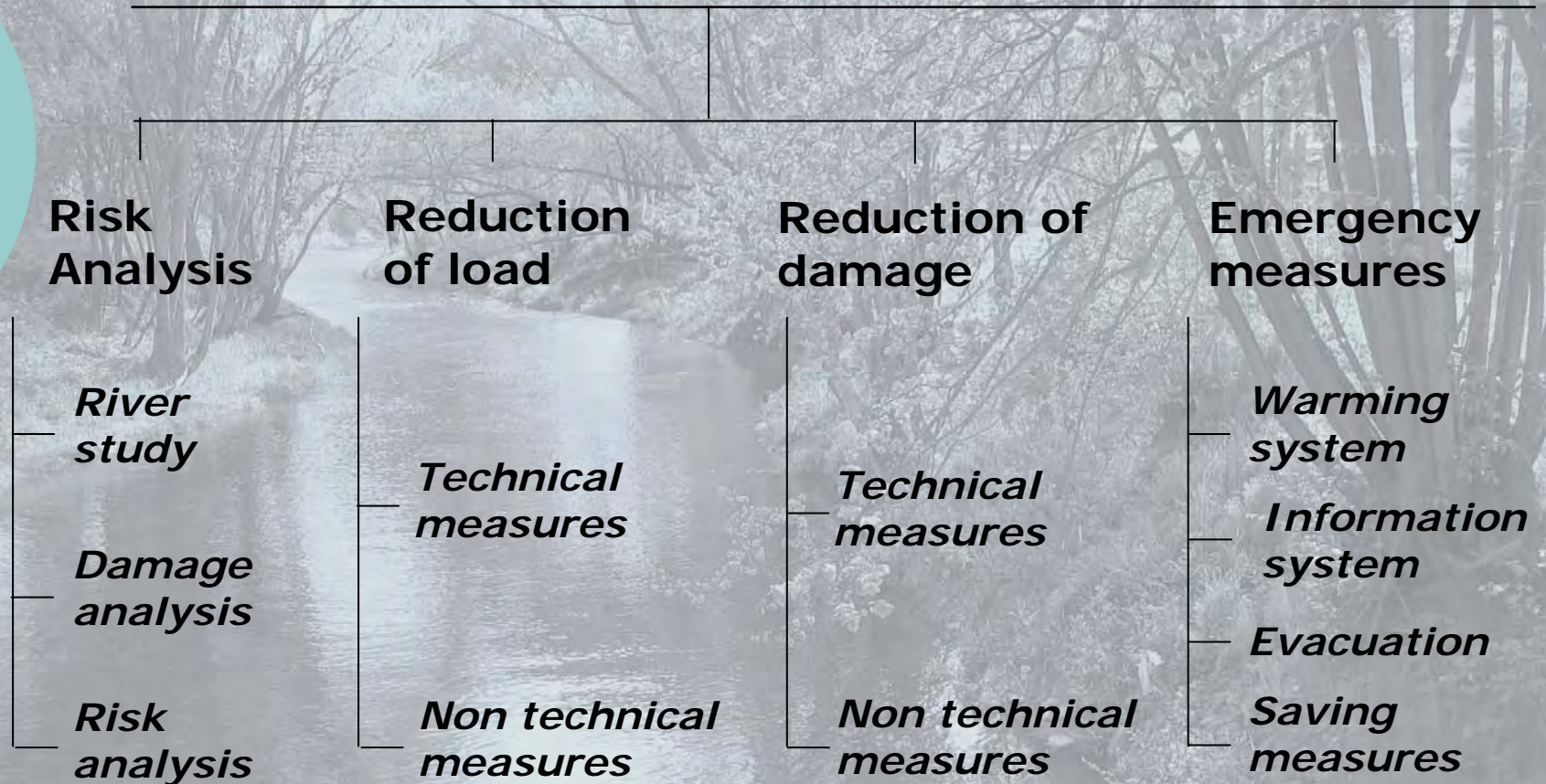
Case of Stift Zwettl

○ Characteristics

- Monastery closed to the Kamp
- 10 buildings in flooded area
- Big flood event in 2002



Integrated Flood Risk Management



Risk analysis

○ River study

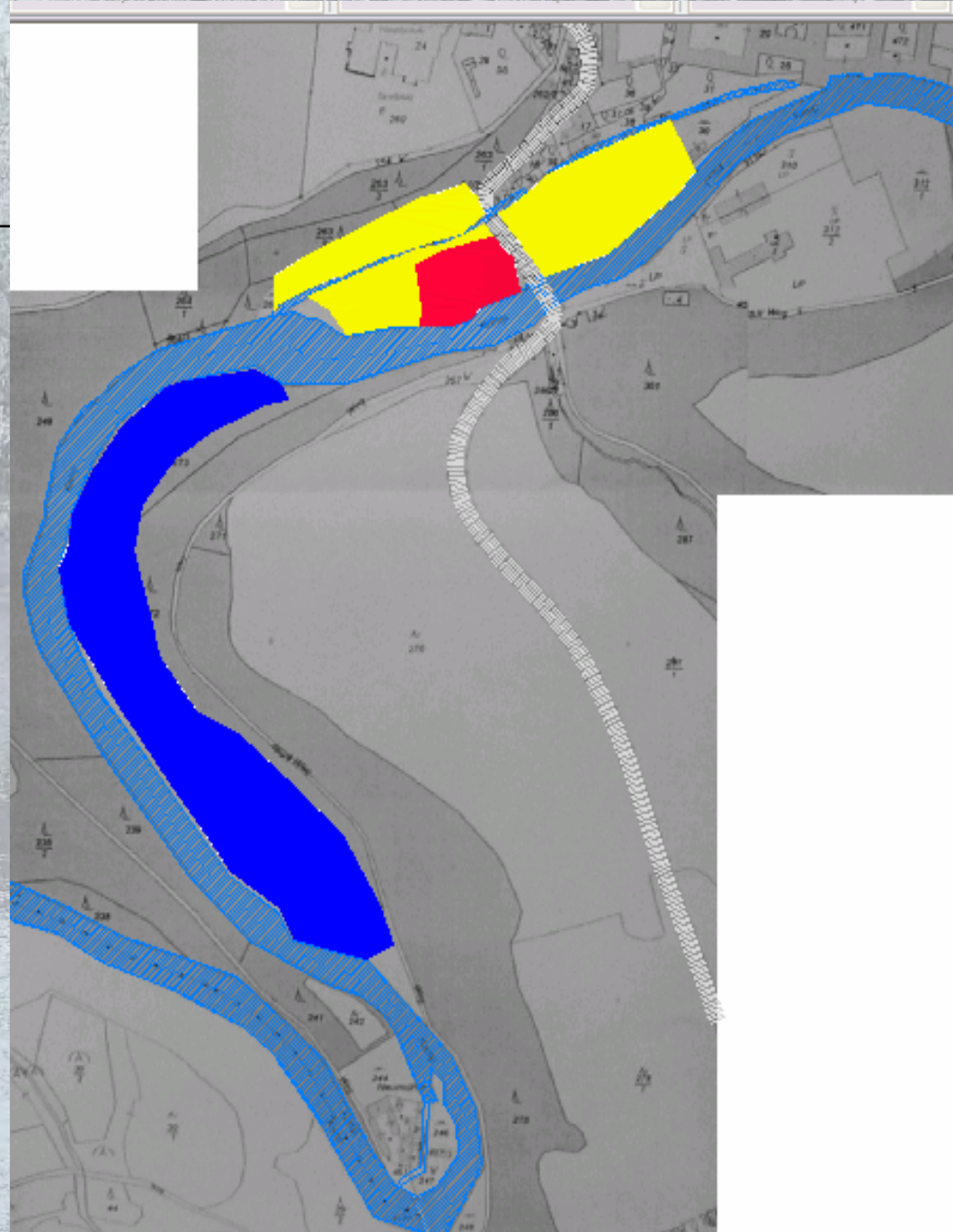
- With the declaration of inhabitants
- With the morphology of the riverbed and bank

○ Damage analysis

- With the declaration of inhabitant
- With what could happens now

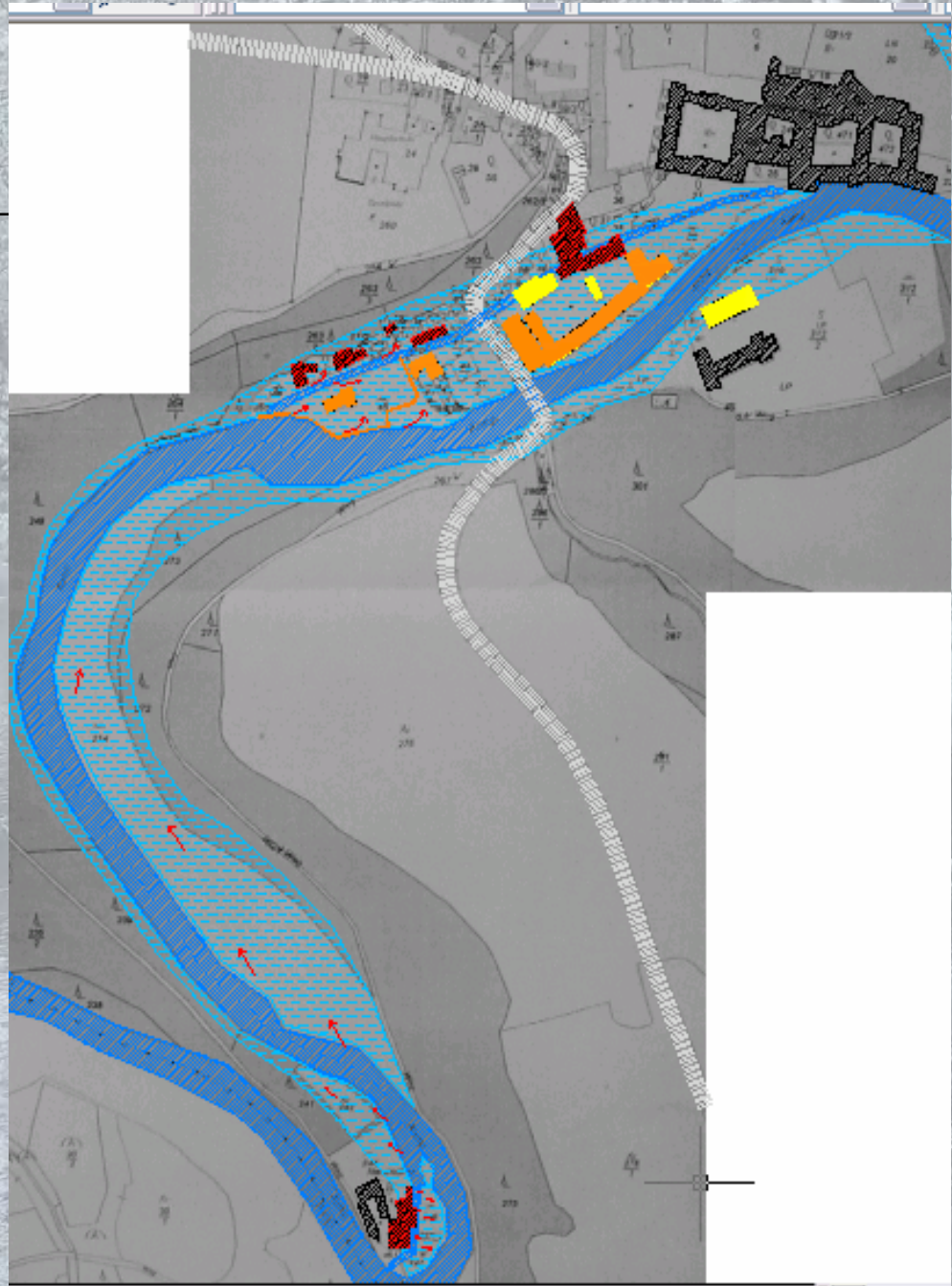
Risk analysis

- Flooded area
- Hydraulic function
- Zoning



Risk analysis

- Conclusion
- 3 Risk Levels
 - Light risk
 - Medium risk
 - Hight risk



Reduction of load

- Technical measures
 - Increasing the retention capacity
 - Discharge regulation
 - Evacuation of water



Reduction of load

- Technical measures
 - Increasing the retention capacity (bassin integrated in the landscape)
 - Discharge regulation
 - Evacuation of water
- Non technical measures
 - Regular bank maintenance
 - A basin wide approach is recommended

Reduction of damage

- Technical measures
 - Elevate the first floor of houses
 - Waterproof plaster on the wall
 - Place and protect electric installations over the flood level
- Non technical measure
 - No more construction on the flooded area
 - Involve the population, informations...

Emergency measures

- Warning system
 - Weather forecast
 - On-line discharge evaluation
- Information system
 - Alarm system
 - Population information (before, during and after the flood)
- Evacuation of people
 - Evacuation plans

Conclusion

- Decisions basis for SP
(and catastrophe mapping, infrastructure planning...)
- Basis for risk communication
(information, participation -> problem awareness)
- Still some problems :
 - HZM not available in all communities
 - SP vs. Economical interest